

WHAT IS CLAIMED IS:

1. A plasma display panel comprising:

a pair of substrates having a transparent front surface and disposed to leave a discharge space therebetween;

5 a plurality of barrier ribs disposed on one substrate to partition the discharge space into a plurality of respective green discharge spaces, blue discharge spaces and red discharge spaces;

a group of electrodes disposed on the substrates to generate discharge in the discharge spaces partitioned by the barrier ribs;

10 a phosphor layer formed in the discharge spaces, the phosphor layer being a green phosphor layer for the green discharge spaces, a blue phosphor layer for the blue phosphor discharge spaces, and a red phosphor layer for the red discharge spaces; and

a discharge gas filled in the discharge space,

15 wherein each green phosphor layer comprises from 10 to 70% by weight of a first green phosphor selected from the group consisting of $\text{Zn}_2\text{SiO}_4\text{:Mn}$, $(\text{Zn}, \text{A})_2\text{SiO}_4\text{:Mn}$ where A is an alkali metal, and mixtures thereof; from 0 to 30% by weight of a second green phosphor selected from the group consisting of $(\text{Ba}, \text{Sr}, \text{Mg})\text{O}\cdot a\text{Al}_2\text{O}_3\text{:Mn}$ where a is from 1 to 23, $\text{LaMgAl}_x\text{O}_y\text{:Tb,Mn}$ where x is from 1 to 14 and y is from 8 to 47, and mixtures thereof; and from 20 to 70% by weight of a third green phosphor selected from the group consisting of $\text{ReBO}_3\text{:Tb}$ where Re is at least one rare earth element selected from the group consisting of Sc, Y, La, Ce, and Gd,

20 wherein the discharge gas comprises at least 6% by weight of Xe based on the total weight of the discharge gas.

25 2. The plasma display panel according to claim 1, wherein the discharge gas comprises from 6 to 50% of Xe based on the total weight of the discharge gas.

30 3. The plasma display panel according to claim 2, wherein the discharge gas comprises from 6 to 30% of Xe based on the total weight of the discharge gas.

4. The plasma display panel according to claim 3, wherein the discharge gas comprises from 7 to 20% of Xe based on the total weight of the discharge gas.

5. The plasma display panel according to claim 4, wherein the discharge gas comprises from 10 to 20% of Xe based on the total weight of the discharge gas.

6. The plasma display panel according to claim 5, wherein the discharge gas comprises from 10 to 15% of Xe based on the total weight of the discharge gas.

7. The plasma display panel according to claim 1, wherein the green phosphor comprises from 20 to 60% by weight of a first green phosphor; from 5 to 25% by weight of a second green phosphor; and from 25 to 65% by weight of a third green phosphor.

8. The plasma display panel according to claim 1, wherein the amounts of the phosphors and the discharge percentage are represented by:

$$200 \leq x+y+az \leq 2130$$

where x is the amount of the first green phosphor, y is the amount of the second green phosphor, z is the amount of the third green phosphor, and a is the Xe percentage in the total discharge gas.

9. The plasma display panel according to claim 8, wherein the amounts of the phosphors and the discharge percentage are represented by:

$$380 \leq x+y+az \leq 2130.$$

10. The plasma display panel according to claim 9, wherein the amounts of the phosphors and the discharge percentage are represented by:

$$520 \leq x+y+az \leq 1080.$$

11. A plasma display panel green cell comprising:

a discharge space formed between a pair of substrates by barrier ribs separating adjacent discharge spaces;

a green phosphor layer formed in the discharge space, the phosphor layer including from 10 to 70% by weight of a first green phosphor selected from the group consisting of $\text{Zn}_2\text{SiO}_4\text{:Mn}$, $(\text{Zn}, \text{A})_2\text{SiO}_4\text{:Mn}$ where A is an alkali metal, and mixtures thereof; from 0 to 30% by weight of a second green phosphor selected from the group consisting of $(\text{Ba}, \text{Sr}, \text{Mg})\text{O}\cdot a\text{Al}_2\text{O}_3\text{:Mn}$ where a is from 1 to 23,

LaMgAl_xO_y:Tb,Mn where x is from 1 to 14 and y is from 8 to 47, and mixtures thereof; and from 20 to 70% by weight of a third green phosphor selected from the group consisting of ReBO₃:Tb where Re is at least one rare earth element selected from the group consisting of Sc, Y, La, Ce, and Gd; and

5 a discharge gas inserted in the discharge space comprising at least 6% of Xe based on the total weight of the discharge gas.

12. The plasma display panel according to claim 11, wherein the discharge gas comprises from 6 to 50% of Xe based on the total weight of the discharge gas.

10 13. The plasma display panel according to claim 12, wherein the discharge gas comprises from 6 to 30% of Xe based on the total weight of the discharge gas.

14. The plasma display panel according to claim 13, wherein the discharge gas comprises from 7 to 20% of Xe based on the total weight of the discharge gas.

15 15. The plasma display panel according to claim 14, wherein the discharge gas comprises from 10 to 20% of Xe based on the total weight of the discharge gas.

20 16. The plasma display panel according to claim 15, wherein the discharge gas comprises from 10 to 15% of Xe based on the total weight of the discharge gas.

25 17. The plasma display panel according to claim 11, wherein the amount of the first green phosphor is from 20 to 60% by weight; the amount of the second green phosphor is from 5 to 25% by weight; and the amount of the third green phosphor is from 25 to 65% by weight.

18. The plasma display panel according to claim 11, wherein the amounts of the phosphors and the discharge percentage are represented by:

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$$200 \leq x+y+az \leq 2130$$

where x is the amount of the first green phosphor, y is the amount of the second green phosphor, z is the amount of the third green phosphor, and a is the Xe percentage in the total discharge gas.

19. The plasma display panel according to claim 18, wherein the amounts of the phosphors and the discharge percentage are represented by:

$$380 \leq x+y+az \leq 2130.$$

5 20. The plasma display panel according to claim 19, wherein the amounts of the phosphors and the discharge percentage are represented by:

$$520 \leq x+y+az \leq 1080.$$